

SOT-23 Surface Mount Schottky Barrier Rectifier

Features

- V_R 30V
- $I_{F(AV)}$ 0.2A
- High Current Capability
- Low Forward Voltage Drop
- Extremely Fast Switching Speed

Applications

These Schottky barrier diodes are designed for high speed switching applications, circuit protection, and voltage clamping.

Mechanical Data

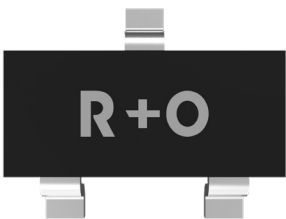
- Case: SOT-23
- Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Cathode line denotes the cathode end

Function Diagram

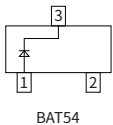
Reverse Voltage
30 V

Forward Current
0.2 Ampere

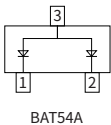
SOT-23



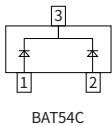
Marking:
BAT54:KL1
BAT54A:KL2
BAT54C:KL3
BAT54S:KL4



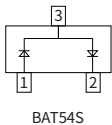
BAT54



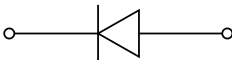
BAT54A



BAT54C



BAT54S



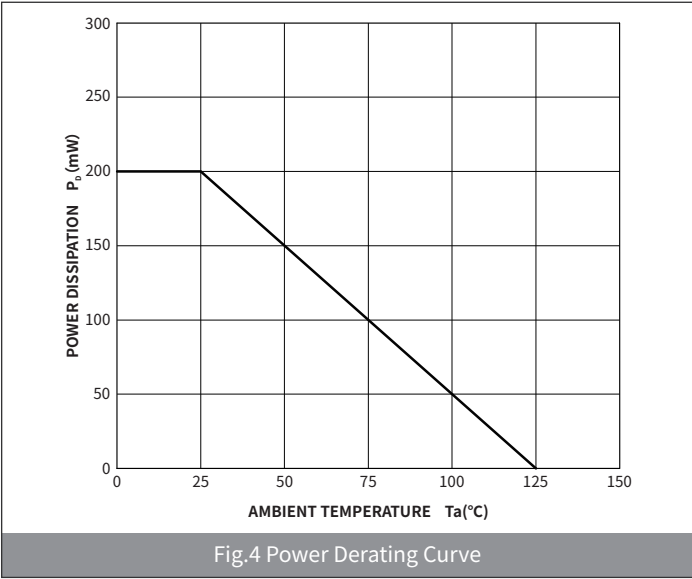
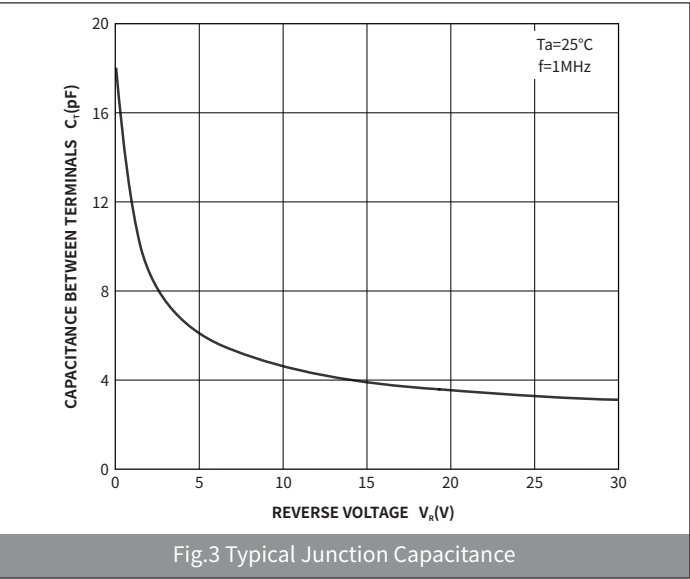
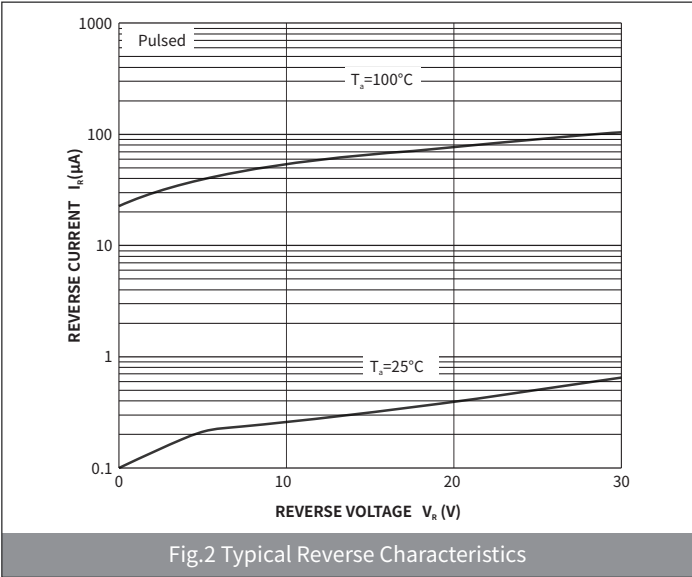
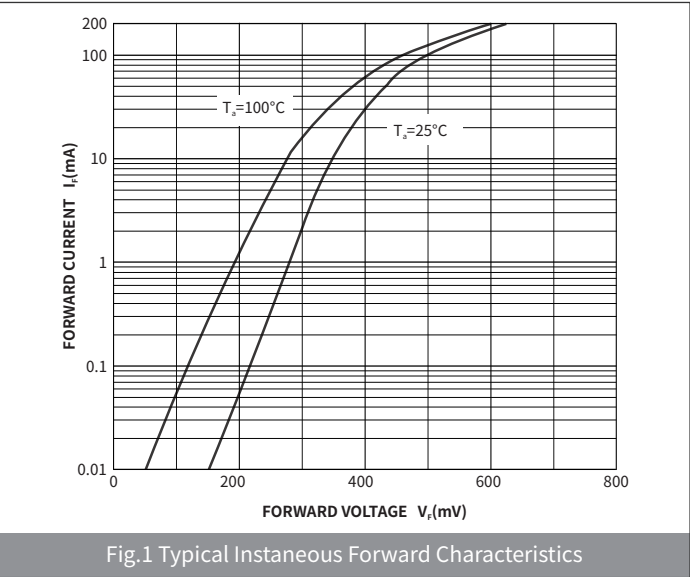
Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Maximum repetitive peak reverse voltage	V_{RRM}	V	30
Maximum RMS voltage	V_{RMS}	V	21
Maximum DC blocking voltage	V_{DC}	V	30
Maximum average forward rectified current	$I_{F(AV)}$	mA	200
Non-repetitive Peak Forward Surge Current @ t=8.3ms Half-sine wave	I_{FSM}	mA	600
Power Dissipation	P_D	mW	200
Junction Temperature	T_j	°C	125
Storage temperature range	T_{STG}	°C	-55 ~+150
Typical thermal resistance	$R_{\theta JA}$	°C /W	500

● Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	UNIT	Min	Typ	Max
Maximum forward voltage	$I_F = 0.1\text{mA}$	V_F	mV	—	—	240
	$I_F = 1.0\text{mA}$			—	—	320
	$I_F = 10\text{mA}$			—	—	400
	$I_F = 30\text{mA}$			—	—	500
	$I_F = 100\text{mA}$			—	—	1000
Maximum reverse current	$V_R = 25\text{V}$	I_R	μA	—	—	2.0
Capacitance between terminals	$V_R = 1.0\text{V}$, $f = 1\text{MHz}$	C_T	pF	—	—	10
Reverse Recovery time	$I_F = I_R = 10\text{mA}$ $I_{rr} = 0.1 \times I_R$, $R_L = 100\Omega$	t_{rr}	ns	—	—	5.0

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	45000	180000	7"

● Package Outline Dimensions (SOT-23)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
θ	-	8°	-	8°

● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.75	0.85	0.030	0.033
K	0.85	0.95	0.033	0.037
M	1.95	2.05	0.077	0.081
N	1.85	1.95	0.073	0.077